

3/8" 1/2"
10mm 12.7mm

9/16" 5/8"
14mm 15mm

Engineered Flooring Staple Down Installation

STAPLE DOWN INSTRUCTIONS

ATTENTION

Inspect **ALL** materials carefully **BEFORE** installation. Warranties **DO NOT** cover materials with visible defects once they are installed.

It is the responsibility of the installer/owner to determine if the job site subfloor and job site conditions are environmentally and structurally acceptable for wood floor installation. Mullican Flooring declines any responsibility for wood floor failure resulting from or connected with subfloor, subsurface, job site damage or deficiencies after hardwood flooring has been installed.

STAPLE DOWN INSTALLATION

Tools: 3/8 and 1/2 thick products can use a 1 1/4 or 1 1/2 inch 18 gauge staple, 7/32 or 1/4 inch crown or 1 1/4 inch 20 gauge cleat. 9/16 and 5/8 thick products can use a 1 1/2 inch 18 gauge staple. Cleat should be 1 3/4 inch 18 gauge cleat. **Do not use staples or nails intended for 3/4 inch solid flooring products.**

Wood type subfloors should also be checked for moisture using a reliable moisture meter. Wood or plywood subfloors should not exceed 14% moisture content, the moisture content difference between hardwood flooring and subfloor should not exceed 4%. Check with your local distributor for your geographical variances.

SUBFLOOR:

- **5/8" minimum thickness, preferred 3/4" or thicker plywood** installed with long edges at a right angle to the 16" on center floor joists and staggered so that the end joints in adjacent panels break over different joists. Nail at each bearing with 6d threaded or 8d common nails spaced 10" on center along intermediate joists.
- **1" x 4" to 6" wide, square edge, kiln dried coniferous lumber**, laid diagonally over 16" on center wooden joists. The ends of all boards are to be cut parallel to the center of the joists for solid bearing. Face nail each board solidly at every bearing on the joists with two nails (7d threaded or 8d common).
- **23/32" minimum O.S.B. on 19.2-inch minimum center floor joists** with system properly nailed or minimum 7/8" subfloor with 24" on center floor joists or trusses.
- Baseboards should be installed so that their lower edge is slightly above the level of the finished floor, but not nailed into the finished floor.
- Basement and crawl spaces must be dry and ventilated when plank or strip flooring is to be installed over them. In crawl spaces a vapor barrier should be provided. Black vapor barrier must be provided below subfloor on the ground. (6 mil. black)
- Subfloor should be flat or made to be flat to 3/16" in a 8' ft. radius.
- Particle board of any thickness is **NOT ALLOWED!**
- Adequate and proper nailing as well as soundness of the subfloor should be ascertained. Foreign material shall be removed from the subfloor surface and swept clean.
- The clean subfloor shall be covered wall to wall with 15lb. asphalt saturated felt, Aquabar[®] B (**NO ROSIN PAPER**), or Mullican Moisture Mat. Butt the edges when positioning one or the above mentioned moisture retarder. Double the felt around heat ducts that may be in the floor.

General Staple Down Installation Instruction:

- Time at which to install hardwood flooring: Lay only after sheetrock and tile work are thoroughly dried and all but the final woodwork and trim have been completed. The building interior should have been dried and seasoned and a comfortable working temperature (at least 60° F) and a relative humidity of 35 – 55% should exist during and after installation.
- **DO NOT open until ready to install.**

Preparation of subfloor: Subfloor irregularities and undulation may cause any wood flooring installation to develop hollow spots between the flooring and subfloor. These hollow spots are NOT the result of any wood floor manufacturing defect and are NOT covered by the Mullican Flooring warranty.

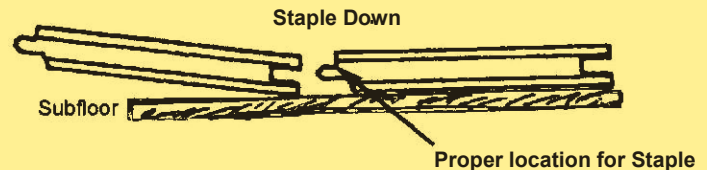
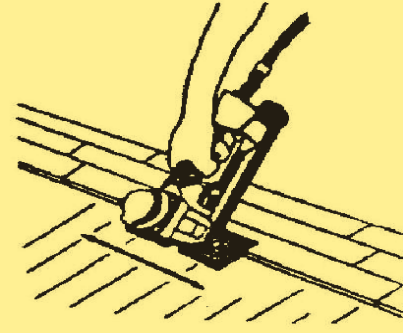
- Adequate and proper stapling as well as soundness of the subfloor should be ascertained. Foreign material shall be removed from the subfloor surface and swept clean.
- The clean subfloor surface shall be covered, wall to wall, with 15 lb asphalt saturated felt, Aquabar[®] B, or Mullican moisture mat (**NO ROSIN PAPER**). Butt the edges of this felt when positioning it.
- Laying direction for plank flooring: Flooring should be laid at right angles to the floor joists and, if possible, in the direction of the longest dimension of the room.

Note: Normally, expansion space around the room should be the same distance as the thickness of the hardwood flooring.

- The floor should be installed from several cartons at the same time to ensure color and shade mix.
- End joints should never be closer than 4" from each other.
- Staple Engineered Plank Hardwood Flooring: The first and last row of flooring should be face nailed and filled, as well as staples placed at Tongue. Staple or Nail (cleat) each board along the tongue every 4 to 6 inches apart and within 2 inches of each end joint. This should be done to the entire floor.

Notes:

- To avoid movement in hardwood floor relative humidity should be maintained year round at 35-55%. Temperature should be kept between 68°F-78°F year round.
- The use of matching wood flooring putty to cover small cracks or face nail holes should be considered normal in hardwood flooring installation.



Radiant Heat Subfloors (OAK ONLY) – See instructions on reverse page (Glue Down Installation) or go to: www.mullicanflooring.com

FLOATING INSTALLATION

- 3/8", 9/16", 5/8" or 1/2" product **3" width or wider** can be floated in some, not all, installations. If necessary call your supplier for details or go to: www.mullicanflooring.com

NOTE:

** Do not use any type of tape on the hardwood finish surface. If a covering is needed after installation the wood floor should be completely covered and covering taped to itself, not the finish of wood flooring.

Trim pieces available from your Mullican Flooring Distributor.

Engineered Flooring Glue Down Installation

$\frac{3}{8}$ " $\frac{1}{2}$ "
10mm 12.7mm

$\frac{9}{16}$ " $\frac{5}{8}$ "
14mm 15mm

GLUE DOWN INSTRUCTIONS

ATTENTION

Inspect **ALL** materials carefully **BEFORE** installation. Warranties **DO NOT** cover materials that are installed with visible defects.

It is the responsibility of the installer/owner to determine if the job site Subfloor and job site conditions are environmentally and structurally acceptable for wood floor installation. Mullican flooring declines any responsibility for wood floor failure resulting from or connected with subfloor, subsurface, job site damage or deficiencies after hardwood flooring has been installed.

GLUE DOWN INSTALLATION

ADHESIVE: Use the appropriate Mullican adhesive, or quality urethane adhesive is recommended.

TOOLS: The required tools for installation of these products include a hammer, hand power saw, chalk line, wood floor adhesive and recommended trowel.

Recommended Trowel: Follow adhesive manufacturer's guidelines.

General Installation Instruction:

Time at which to install hardwood flooring: Lay only after sheetrock and tile work are thoroughly dried and all but the final woodwork and trim have been completed. The building interior should have been dried and seasoned and comfortable working temperature (at least 60°F) should exist during installation.

Preparation of subfloor:

Subfloor irregularities and undulation may cause any wood floor installation to develop hollow spots between the flooring and subfloor. These hollow spots are NOT the result of any wood floor manufacturing defect and are NOT covered by the Mullican Flooring warranty.

As part of your subfloor preparation remove any existing base, shoe mold or doorway thresholds. These items can be replaced after installation, but should be replaced in such a way as to allow at least $\frac{1}{4}$ " room for expansion around the perimeter of the room. All door casings should be notched out or undercut to allow for $\frac{1}{4}$ " room expansion and to avoid difficult scribe cuts. This is easily done by placing a piece of the engineered product on the subfloor as a height guide for your handsaw or jamb saw.

Note: Normal expansion space around the room should be the same distance as the thickness of the hardwood flooring.

Thoroughly clean subfloor:

Remove paint, wax, oil, plaster, "sheetrock mud" and other foreign materials, as well as obvious surface irregularities. #3-1/2 grit open coat paper may need to be used to grind a concrete subfloor. This will loosen any dirt, loose concrete or contaminants. Sweep or vacuum thoroughly. All previous or existing glues or adhesives must be removed before installing new hardwood floor. Concrete subfloors must be clean, flat, sound and sufficient compression strength (3000 lbs. P.S.I.) being sure that the surface is NOT slick.

Sections not flat due to waviness, trowel marks, ect. are to be flattened by grinding or the use of leveling compound. Especially along the walls, the subfloor flatness must be checked and if necessary improved. Flatten to 3/16" in 10' radius. In addition to cement subfloors, these wood flooring products can be installed over dry, flat subfloors such as plywood. **No Particle board.**

Time at which to install hardwood flooring: Lay only after sheetrock and tile work are thoroughly dried and all but the final woodwork and trim have been completed. The building interior should have been dried and seasoned and a comfortable working temperature (at least 60° F) and a relative humidity of 35 – 55% should exist during installation. If subfloor is concrete, check for dryness see below. If moisture is present, do not lay. All concrete subfloors on or below grade need to be tested.

Concrete subfloor Moisture Testing:

Electrical Impedance Test and Electrical Resistance Test (Concrete Moisture Meters) Follow Moisture Meter MFG Guidelines. If Meter shows possibility of excess moisture further testing is required. Calcium Chloride Test. See below.

Relative Humidity Test (Standard test method for determining relative humidity on concrete floor slabs using Situ Probes. If test shows over 75% vapor retarder must be used or wait for further curing.

Calcium Chloride Test ASTM F-1869 Readings over 3 lbs and up to 7 lbs vapor retarder needed.

See NWFA installation guidelines chapter 3 Moisture Testing for full information of testing.

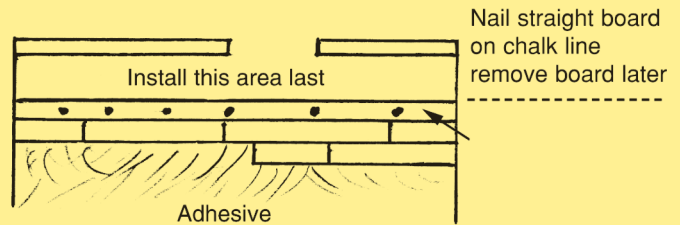
Check floor in several locations. Consult with your local Mullican Flooring distributor for graphical variances.

Note: Normal expansion space around the room should be the same distance as the thickness of the hardwood flooring.

- The use of Mullican Flooring putty to cover small cracks or face nail holes should be considered normal in hardwood flooring installation.

New wood type subfloors should also be checked for moisture using a moisture meter. In general, wood or plywood subfloors should not exceed 14% moisture content and no more than 4% MC difference between wood flooring and subfloor. Check with your local distributor for your geographical variances. If the plywood is used as an overlay over the existing subfloor, the thickness of the overlay material must be such as to yield a total $\frac{3}{4}$ " subfloor thickness.

Suggested Layout Working Line: EXAMPLE: For 3" Material, snap a chalk line 30 $\frac{1}{4}$ " from the wall on the door side of the room. The small area will be your working space and the last to be installed. Temporarily nail straight board on chalk line.



Caution: Proper humidity must be controlled between 35 – 55% for successful performance before, during and after installation.

Installing the floor:

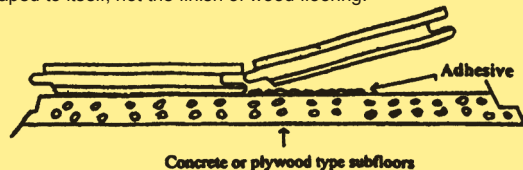
- The floor should be installed from several cartons at the same time to ensure color and shade mix.
- End joints should never be closer than 4 inches from each other.
- Install tongue into groove.
- Tongue and groove should be engaged by hand.
- Lift a plank periodically to check adhesive transfer.
- Remove nailed board and install remainder of flooring.
- Install base and mould after floor installation.
- Clean adhesive off surface of wood with cleaner and soft cloth. (see adhesive manufacturer's recommendations)

For Unfinished Products

- Do not start sanding product until adhesive has cured.

NOTE:

** Do not use any type of tape on the hardwood finish surface. If a covering is needed after installation the wood floor should be completely covered and covering taped to itself, not the finish of wood flooring.



Radiant heat subfloors – See below.

Concrete or Plywood: Radiant Heat (OAK ONLY)

- Radiant Heat Subfloors on or above grade.
- The maximum temperature of subfloor under normal use should not exceed 80°F (Check with heat system manufacturer.)
- For correct water temperature inside heating pipes, check with manufacturer's suggested guidelines.
- Heating pipes must be covered with 1 $\frac{1}{4}$ " of concrete or minimum of 1/8" below bottom side of plywood subfloor.
- Before installation of hardwood flooring, heat system must be operated at normal living temperature for a minimum of 14 days. One to two days before the flooring is laid, switch off heating unit. (At time of installation, subfloor should be 64°F to 68°F)
- Room temperature should not vary more than 15°F season to season. Mullican Flooring approved systems must not exceed 8 watts per square foot heating.



LIMITED RESIDENTIAL WARRANTY PROGRAM

MULLICAN SOLID AND ENGINEERED PREFINISHED HARDWOOD FLOORING

The limited warranties set forth below apply only to pre-finished products and are effective with purchases made after July 7, 2014. All warranties are limited to the original purchaser only.

FINISH WARRANTY

Mullican Flooring warrants that the finish will not wear through to the wood within the amount of time specified in the Finish Warranty Chart (see below), or as long as the original purchaser owns the floor, whichever is less. Please refer to the Finish Warranty Chart or to the individual product brochure for more information on your particular product. EXCLUSIONS AND LIMITATIONS DO APPLY. SEE BELOW FOR DETAILS.

MULLICAN SOLID AND ENGINEERED PRODUCT FINISH WARRANTY

SOLID PREFINISHED	ENGINEERED PREFINISHED
LIFETIME WITH CLARITAGE EXTRA BY PPG	LIFETIME WARRANTY
- ST. ANDREWS	- PONTE VEDRA
- MUIRFIELD	- SAN MARCO
25 YEAR FINISH WARRANTY	25 YEAR FINISH WARRANTY
- CHATELAINE	- RIDGECREST
- KNOB CREEK	- MEADOWBROOKE
- CASTILLIAN SOLID	- CHALMETTE
- WILLIAMSBURG PLANK	- AUSTIN SPRINGS
- QUAIL HOLLOW	- CASTILLIAN
- ST. JAMES	- HILLSHIRE
15 YEAR FINISH WARRANTY	- LINCOLNSHIRE
- OAK POINTE	- NEWTOWN PLANK
5 YEAR FINISH WARRANTY	- MOUNT CASTLE
- WOODLAND RIDGE	- OAKMONT
NO WARRANTY	- MERION
- "CABIN", "TAVERN",	- 15 YEAR WARRANTY
"COUNTRY", OR "AS IS"	- CASTLE ROCK
	NO WARRANTY - "CABIN", "TAVERN", OR "AS IS" - 0 YEARS
	- UNFINISHED - 0 YEARS

MATERIAL WARRANTY

Mullican Flooring warrants that the products have been manufactured in compliance with the grading rules of Mullican Flooring, and will be free from manufacturing defects for as long as the original purchaser owns the floor. Manufacturing defects do not include natural wood characteristics such as mineral streaks, knots, grain variations, normal minor differences between color of samples and the color of installed floors, color variations from board to board, or minor width variation. Due to the nature of wide width plank (3" and wider), some minor width variation is to be expected and is not considered a defect.

CASTILLIAN SOLID AQUA SHIELD MOISTURE WARRANTY

Mullican Flooring warrants that Castillian Solid installed with the Aqua Shield system will not warp, buckle or cup due to sub floor moisture for as long as the original purchaser owns the home. The Aqua shield system consists of Castillian Solid installed in conjunction with Mullican Moisture Mat. Job must be registered with Mullican Flooring and a pre installation checklist must be completed and filed with Mullican Flooring in order for the Moisture Warranty to be in effect.

** Cupping is when the long edges of the flooring boards are higher than the center of the flooring boards in excess of .0833 inches.

EXCLUSIONS AND LIMITATIONS

These warranties do not cover damage, indentations, scratches, or stains arising from negligence, accidents, abuse, fire or excessive heat, abnormal wear, construction, spike heels, grit, sand or other abrasives, dents, insect infestation after the product has left our factory, or domestic animals. Splits and cracks after move-in are not normally manufacturer related.

These warranties do not cover damage caused by use of the flooring for purposes other than those for which it was designed; damage caused by disasters such as fire, flood, wind, and lightning; damage during shipment; or any other abuse or misuse by the purchaser.

It is critical that all installations are done in compliance with the procedures outlined in the Mullican Flooring installation instructions, which can be found in each carton of flooring and/or online at www.mullicanflooring.com. No damage or defects caused by improper installation or failure to provide a suitable installation environment are covered by this warranty. Failure to install your flooring in accordance with the instructions will void all warranties.

The sole obligation and liability of Mullican Flooring under our limited warranties is to repair, replace, or refinish the floor, at Mullican's option. Only Mullican floors that were professionally installed will be eligible for labor cost reimbursement. If you installed the floor yourself, we will cover the cost of replacement materials only. (Any and all labor costs must be pre-approved by the Mullican Flooring Claims Department.)

These warranties EXCLUDE and will not pay consequential or incidental damages associated with any warranty claim. Mullican Flooring will not pay costs associated with relocation during the

repair process such as hotel, meals, or moving and storage of furniture. This limitation does not apply to claims for personal injury. Some states do not allow limits on warranties, or on remedies for breach in certain transactions. In such states, the limits in this paragraph may not apply.

No warranty coverage is provided for flooring that contains obvious defects of any kind that were installed nonetheless. If, before installation, you discover any flooring that has obvious defects, please immediately contact the dealer from whom the flooring was purchased and replacement flooring will be provided at no cost.

Only Mullican Flooring approved cleaning products are appropriate for use on Mullican Flooring products. Use of non-Mullican Flooring approved cleaning and maintenance products, including oil soap or ammonia based products, will void all warranties. For a current list of approved products, please call your local dealer, wood distributor, or go online to www.mullicanflooring.com.

The limited warranties do not cover color changes to any flooring which results from exposure to UV light. Normal exposure to sunlight will cause changes in the shading of any wood floor, and this is not considered a defect. Certain species including, but not limited to, American Cherry, Walnut, Brazilian Cherry, Tigerwood, and most Exotics, are especially susceptible to color change. Please contact your Mullican retailer for more information. Area rugs should be moved occasionally, as they block sunlight and may give the appearance of discoloration under the rug.

After your floor is installed, it is critical to maintain the temperature and humidity of the home within the ranges set forth in the applicable installation instructions for the product. Failure to follow these guidelines, especially with regard to humidity range, can result in a performance failure or damage to your floor. In addition, it is important to maintain your floor in accordance with the Mullican Flooring maintenance instructions which can be found in the Mullican Flooring maintenance flyer and/or online at www.mullicanflooring.com.

These warranties do not cover damage or unsatisfactory performance caused by excessive moisture or moisture vapor including, but not limited to, improper humidity inside the home, excessive ground moisture that migrates into the home for any reason, excessive sub-floor moisture, water leaks caused by broken pipes or appliances, improper cleaning methods such as wet mopping or automated cleaning machines, weather conditions or natural disasters such as flooding or excessive rainfall.

Since wood is a natural product, it will tend to expand and contract as moisture and humidity levels inside the home may change. Accordingly, normal expansion and contraction which results in minor separations between flooring boards are not covered by these warranties.

Any Mullican Flooring product which is designated as "cabin grade", "tavern grade", "second", or "as is" is not covered by the above warranties.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, OR AS OTHERWISE SET FORTH HEREIN. NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE ARE MADE, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES SHALL MULLICAN FLOORING BE LIABLE FOR ANY LOSS OR DAMAGE ARISING FROM THE PURCHASE, USE, OR INABILITY TO USE THIS PRODUCT, FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. YOUR RIGHTS AND THE LIMITATIONS DESCRIBED ABOVE VARY FROM STATE TO STATE. THUS, IT IS IMPORTANT TO RETAIN THIS WARRANTY INFORMATION. NO INSTALLER, RETAILER, DISTRIBUTOR, AGENT, OR EMPLOYEE OF MULLICAN FLOORING HAS THE AUTHORITY TO INCREASE OR ALTER THE OBLIGATIONS OR LIMITATIONS OF THIS WARRANTY.

HANDLING OF CLAIMS UNDER THIS WARRANTY

Claims must be filed within the coverage period, and information verifying the date of purchase may be required. Mullican reserves the right to have a designated Mullican representative inspect the floors and remove samples for technical analysis.

If you need to file a claim under this warranty, first contact your Mullican Flooring retailer. If for some reason, your retailer is unable to satisfy your claim, you may contact us at: Mullican Flooring, Claims Department, P.O. Box 3549 Johnson City, Tennessee 37602.

Any and all disputes arising out of the purchase of Mullican Flooring products or this warranty shall be subject to mandatory and binding arbitration in Johnson City, Tennessee, pursuant to the rules of the American Arbitration Association. Any trials by jury are expressly waived.

MULLICAN SOLID AND ENGINEERED PRODUCT FEATURES

PRODUCT	PAD & RECOAT	SAND & REFINISH *	INSTALL OVER RADIANT HEAT	WHERE TO INSTALL
SOLID	YES	YES	NO	ON GRADE ABOVE GRADE
ENGINEERED	YES	YES	YES (OAK ONLY)	ON GRADE ABOVE GRADE BELOW GRADE

*If your floor is sanded down to the bare wood and a new finish is applied, all finish warranties must be assumed by the finish manufacturer.